



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,216	10/01/2003	Kay Leong Lim	AMT00-002CIP	9687
<div>7590 George O. Saile 28 Davis Avenue Poughkeepsie, NY 12603</div>			<div>EXAMINER KASTLER, SCOTT R</div>	
			<div>ART UNIT 1742</div>	<div>PAPER NUMBER</div>
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/16/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/676,216

Applicant(s)

LIM ET AL.

Examiner

Scott Kastler

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2007 and 06 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-5 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-5 and 10-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/6/2006 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The above claims, as amended on 12/6/2006 are indefinite in that the requirement that each component have after sintering "one and only one functional property that is different from any functional property possessed, after sintering, by any other member of the group" is indefinite. The term "functional property" as defined in the originally filed specification at pages 14 and 15 for example is stated as various properties that are application related and not clearly defined (see the second full paragraph of page 14 for example where it is stated that the definition of a functional property is not precise). Because no "application" for the recited compound is given, as well as no clear definition as to what exactly defines a "functional property" one of ordinary skill in the art would not be able to accurately discern the scope of the above claims, since any property of any type could either be said to meet the requirement of a "functional property" or equally, be said not to meet the requirements of a "functional property".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seyama et al in view of Hiraoka et al. Seyama et al discloses the invention substantially as claimed. Seyama et al discloses a method of forming a sintered article comprising:

Forming a first mixture comprising a first metal powder and a binder;

Forming a green body by compression molding said first mixture;

Forming a second mixture comprising a second metal powder and a binder; and

Providing said green body to a mold;

Injection molding said second mixture into said mold; and

Sintering said mixtures to form a sintered article.

The Examiner finds that any combination of different materials recited by Seyama et al meets the limitation of instant claim 4 since as stated above, if a material differs in one of the recited “functional properties”, depending upon the unstated intended application, the other differences can be said not to be “functional properties” with regard to that intended application.

However, Seyama et al does not disclose wherein a lubricant is added to said mixtures, but only discloses addition of binder, plasticizer and solvent.

It is common knowledge in the prior art to add lubricant to formed sinterable mixtures in order to reduce die and injection molding equipment wear.

Art Unit: 1742

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add lubricant to the mixtures of Seyama et al in order to decrease forming equipment wear.

Seyama et al also does not disclose wherein the binder and material composition and amounts are selected so as to control shrinkage so that an outer component is aided in joining to an inner component.

Hiraoka et al teaches that when composite components are formed of separate sinterable mixtures, one of ordinary skill in the art can select a greater amount of shrinkage of an outer component in order to assist in bonding. Hiraoka et al further teaches shrinkage amounts that closely approximate those as claimed by Applicant, thereby establishing a *prima facie* case of obviousness.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to consider shrinkage amounts in the invention of Seyama et al when the geometry forms a joined composite in order to increase the strength of the joined bond.

Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bieberich in view of Seyama et al and Hiraoka et al. Bieberich discloses the invention substantially as claimed. Bieberich discloses a method of forming a wire die comprising:

Providing a composite wire die structure formed of at least two sinterable mixtures; and

Sintering said at least two sinterable mixtures to form a wire die.

However, Bieberich does not disclose the method as claimed, but provides for sinter bonding of mixtures.

Art Unit: 1742

Seyama et al in view of Hiraoka et al as applied to claims 3-5 above, discloses a method of forming a sintered composite body of the claimed method in the same field of endeavor, powder metallurgy, for the purpose of increasing the bond between the separate mixtures of the composite.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the invention of Seyama et al in view of Hiraoka et al in the invention of Bieberich in order to form a wear die of improved composite strength.

Response to Arguments

Applicant's arguments filed on 12/6/2006 have been fully considered but they are not persuasive. Applicant's argument that as amended claims 3-5 distinguish over the applied prior art since the claims are now limited to materials differing in only one functional property is not persuasive because, as stated above, absent a clear statement of what properties are considered functional in a particular instance, as well as what application the material is to be employed in, any property can be considered a functional property, as defined by the originally filed specification, while defining all other properties as not being functional properties.

Applicant's argument that Seyama et al does not include the use of a third feedstock material required by instant claim 10 is not persuasive at least because Seyama et al in the claims for example, specifically recites embodiments employing a third feedstock (see claim 7 of Seyama et al for example).


Art Unit: 1742

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Kastler whose telephone number is (571) 272-1243. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Scott Kastler
Primary Examiner
Art Unit 1742

sk